2100030336

M. Gayathri Ankitha

.NET PROGRAMMING

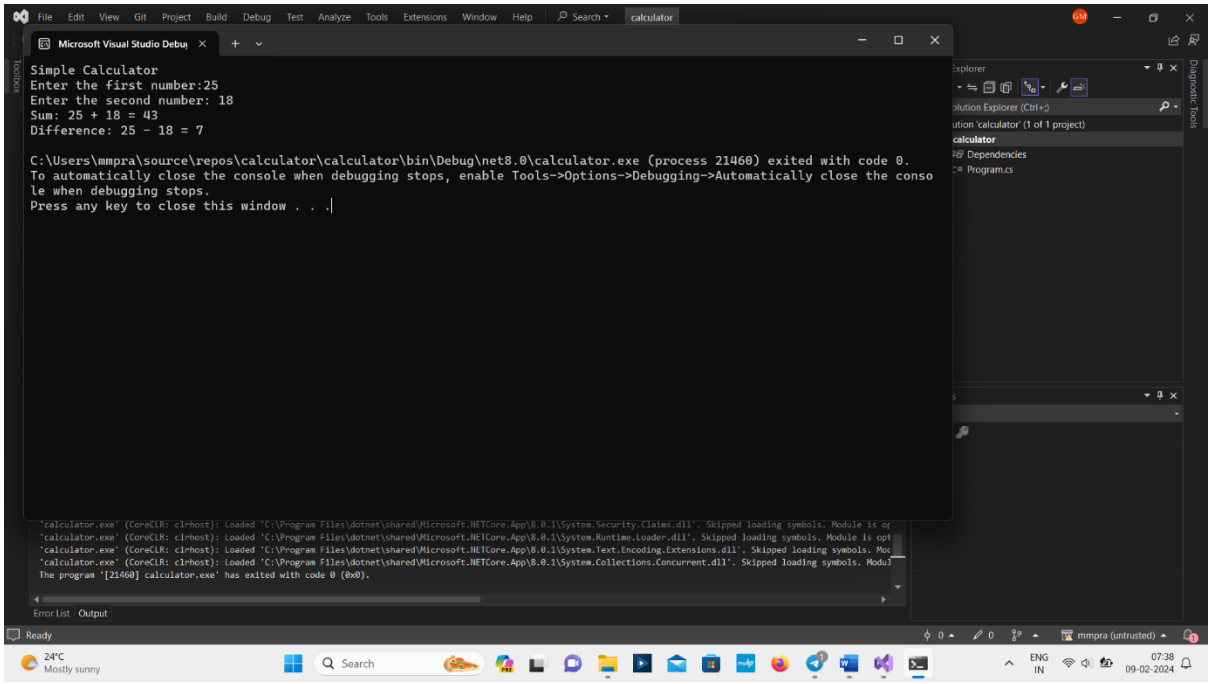
Lab-1

IN-LAB:

1. Write a C# code to implement the simple calculator?

TASK1: It's required to create a simple calculator with addition and subtraction operations for two integer numbers.

```
using System;
class SimpleCalculator
{
    static void Main()
    {
        Console.WriteLine("Simple Calculator");
        Console.Write("Enter the first number:");
        int num1 = Convert.ToInt32(Console.ReadLine());
        Console.Write("Enter the second number: ");
        int num2 = Convert.ToInt32(Console.ReadLine());
        int sum = AddNumbers(num1, num2);
        Console.WriteLine($"Sum: {num1} + {num2} = {sum}");
        int difference = SubtractNumbers(num1, num2);
        Console.WriteLine($"Difference: {num1} - {num2} = {difference}");
    }
    static int AddNumbers(int a, int b)
    {
        return a + b;
    }
    static int SubtractNumbers(int a, int b)
    {
        return a - b;
```



2. Write a C# code to solve the TASK2 and TASK3.

TASK2: For a given integer *n* calculate the value which is equal to:

1. squared number, if its value is strictly positive;
2. modulus of a number, if its value is strictly negative;
3. zero, if the integer n is zero.

Example

```
n = 4      result =  16
n = -5     result =  5
n = 0      result = 0
```

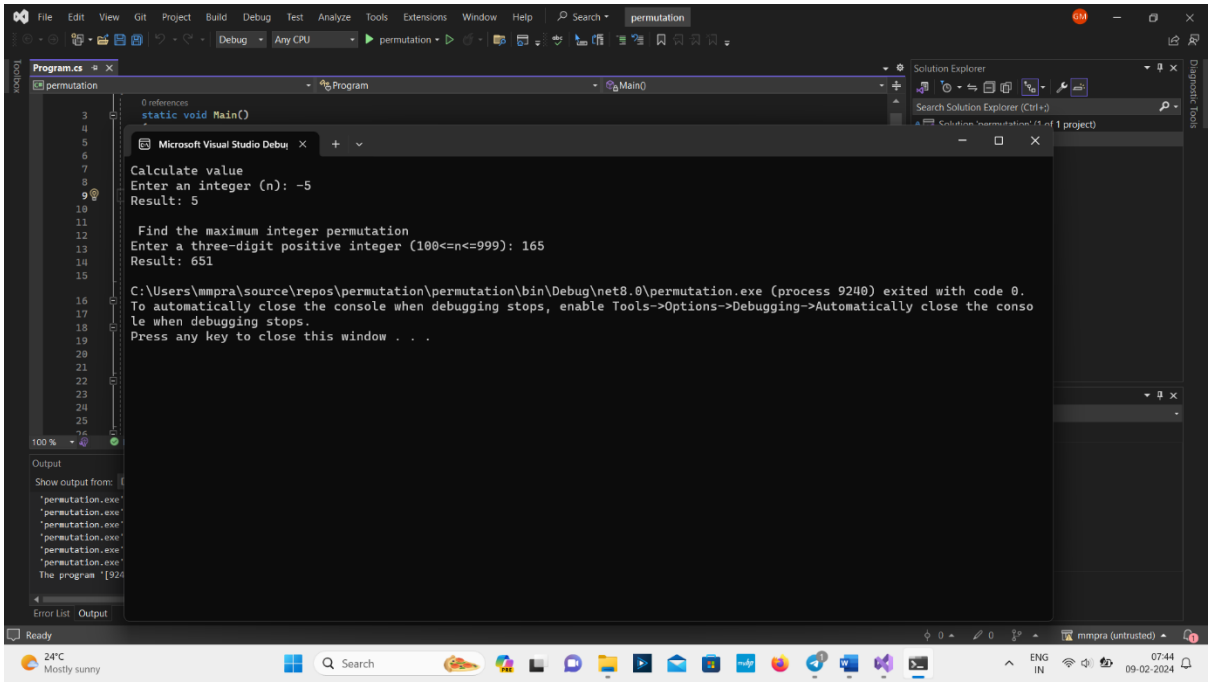
TASK3: Find the maximum integer, that can be obtained by numbers of an arbitrary three-digit positive integer *n* permutation (100<=n<=999).

Example

```
n = 165    result =  651
```

```
class Program
{
    static void Main()
    {
        Console.WriteLine("Calculate value");
        Console.Write("Enter an integer (n): ");
        int n = Convert.ToInt32(Console.ReadLine());
        int resultTask2 = CalculateValue(n);
        Console.WriteLine($"Result: {resultTask2}");
        Console.WriteLine("\n Find the maximum integer permutation");
        Console.Write("Enter a three-digit positive integer (100<=n<=999): ");
        int number = Convert.ToInt32(Console.ReadLine());
```

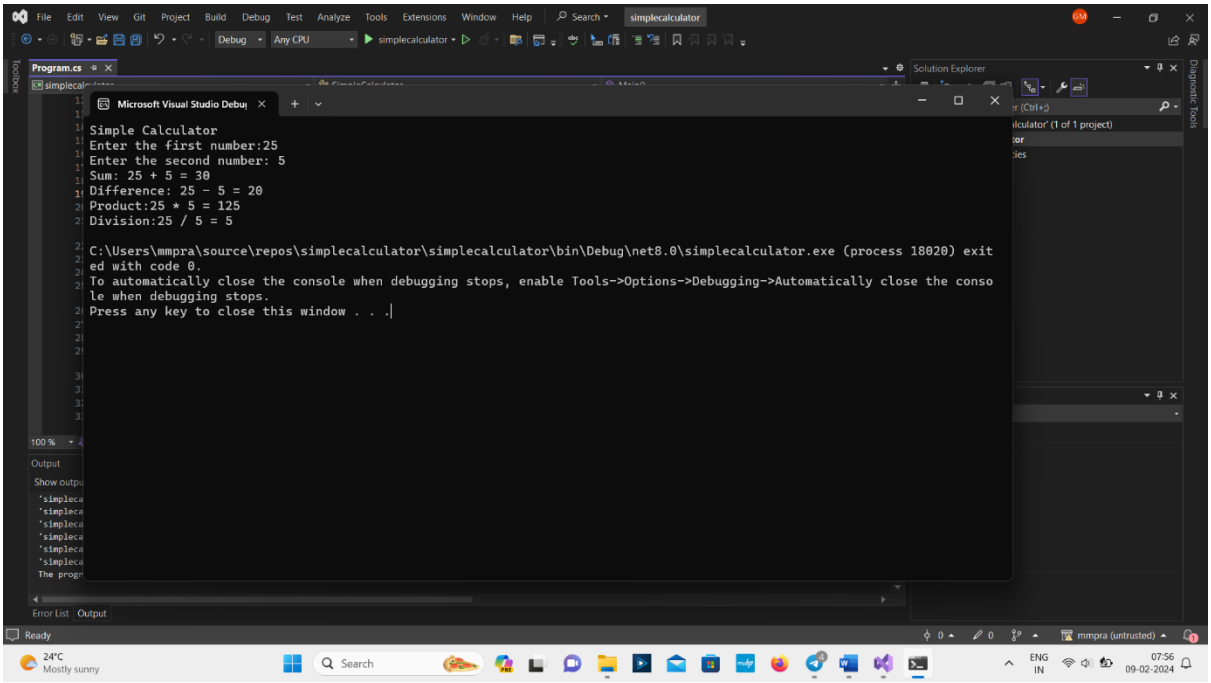
```
        int resultTask3 = FindMaxPermutation(number);
        Console.WriteLine($"Result: {resultTask3}");
    }
    static int CalculateValue(int n)
    {
        if (n > 0)
        {
            return n * n;
        }
        else if (n < 0)
        {
            return Math.Abs(n);
        }
        else
        {
            return 0;
        }
    }
    static int FindMaxPermutation(int number)
    {
        int[] digits = number.ToString().Select(c =>
int.Parse(c.ToString())).ToArray();
        Array.Sort(digits);
        Array.Reverse(digits);
        int result = int.Parse(string.Join("", digits));
        return result;
    }
}
```



POST-LAB

1. Implement a proper calculator with all the functionalities like addition, subtraction, multiplication, division and square root.

```
using System;
using static System.Runtime.InteropServices.JavaScript.JSType;
class SimpleCalculator
{
    static void Main()
    {
        Console.WriteLine("Simple Calculator");
        Console.Write("Enter the first number:");
        int num1 = Convert.ToInt32(Console.ReadLine());
        Console.Write("Enter the second number: ");
        int num2 = Convert.ToInt32(Console.ReadLine());
        int sum = AddNumbers(num1, num2);
        Console.WriteLine($"Sum: {num1} + {num2} = {sum}");
        int difference = SubtractNumbers(num1, num2);
      Console.WriteLine($"Difference: {num1} - {num2} = {difference}");
      int product = MultiplyNumbers(num1, num2);
       Console.WriteLine($"Product:{num1}*{num2}={product}");
        int division = DivideNumbers(num1, num2);
        Console.WriteLine($"Division:{num1}/{num2}={division}");
    }
   static int AddNumbers(int a, int b)
    {
   return a + b;
   }
   static int SubtractNumbers(int a, int b)
   {
      return a - b;
   }
   static int MultiplyNumbers(int a,int b)
  {
      return a * b;
   }
   static int DivideNumbers(int a,int b)
    {
        return a / b;
    }
}
```


Microsoft Visual Studio Debu
Simple Calculator
Enter the first number:25
Enter the second number: 5
Sum: 25 + 5 = 30
Difference: 25 - 5 = 20
Product:25 * 5 = 125
Division:25 / 5 = 5
C:\Users\mmpra\source\repos\simplecalculator\simplecalculator\bin\Debug\net8.0\simplecalculator.exe (process 18020) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .